ATTACHMENT 12

INEL
Idaho National Engineering Laboratory

Pages 6 (including cover sheet)

TO: Vaughn Halford
EG&G

FROM: Natalie Lewis

DATE: Sept. 7, 1994

TIME: 9:20 am

If you do not receive all pages, please call (208) 526-0612 as soon as possible. MK-Ferguson of Idaho Company's Fax No. is (208) 526-0611. Located at INEL/CFA 688

MK-FERGUSON OF IDAHO COMPANY
A MORRISON KNUDSEN COMPANY
P.O. BOX 1748, IDAHO FALLS, ID 83403-1748 (208) 526-3471

U.S. DEPARTMENT OF ENERGY
IDAHO OPERATIONS OFFICE

CONSTRUCTION INTERFACE DOCUMENT

IDF 4700.1 (Rev. 03-88)

ICWA Number: E4F5-93320 | CID Number: 35

To Be Completed By Originator

Subcontractor Field Problem No.: PBF-24 | Date: 8/12/94

Addressee: N. Lewis | Project Title/No.: FY94 UST Removal/Replacement | Subcontract No./Force Account: 593320 F/A

Originator/Company: D. Albrethsen MK-FIC | References: Drawings/Specifications: SAP Plan 3.2.1, 3.2.3

Subject: Tank PBF 752 Petro Contaminated Soil

Problem/Deficiency: ☐ CLARIFICATION ☐ CHANGE

Excavation has been completed to depth of 11'-3½". Concentration of field screening samples taken in bottom of excavation (by PID) exceeds 25 ppm VOC's (see attached). Basalt rock has also been encountered in the bottom of the excavation.

Recommended Solution: COST ☐ yes ☒ no (N/A) SCHEDULE ☐ yes ☒ no (N/A)

Collect confirmation samples. If exceed 2000 ppm, contact DEQ for direction in addition to EG&G Facility Mgr. As of 8/30/94, confirmation samples exceed 2000 ppm and DEQ/EG&G has been contacted.

To Be Completed By Architect-Engineer/Project Manager/Construction Engineer

Solution: | Inspection Requirements: | ECR No.

Solution acceptable. DEQ has directed MK-FIC to turnover to WAG Manager.

QC VENDOR DATA REQUIRED: ☐ YES ☒ NO
REVISED VDS ATTACHED: ☐ YES ☒ NO
SUBMIT UNDER VDS ITEM NO. ______
CM QA REVIEW: ☐ YES ☒ NO
ES&H REVIEW: ☐ YES ☒ NO
WELD LAB REVIEW: ☐ YES ☒ NO
CONST. REVIEW: ☐ YES ☒ NO

[signature] 8/31/94 | N G Lewis 8/22/94 | [signature] 8/31/94 | N/A

*Architect-Engineer/Date | Project Manager/Date | Construction Engineer/Date | Pre-neg. By/Date

*Project Manager to determine requirement for AE review/signature approval.

To Be Completed By Subcontract Administrator/Construction Engineer

Disposition:

☐ Clarification - If you consider that the information contained herein does involve a change in price or project completion, immediately notify the Subcontract Administrator. Do not proceed with work until the price or project completion change has been approved by the Subcontract Administrator.

☐ Change Order No. ________ Pursuant to the Changes Article (GP-99.E), the Subcontractor is hereby directed to proceed as follow

☐ Other ________ Pursuant to Article ________

FORCE ACCOUNT

A.D. Rodgers
EG&G: Tom Race
EG&G: Kyle Briggree

[signature] 8/31/94
Construction Engineer/Date

DIST: Subcontract Unit CE ... ; DOE Project Mgr ... J.D. DeCamo; IC Field ... ; Own... Q. Robinson; AE ... J. Fuller; Subcontractor ... ; Other ... D. Smith

Subcontract Administrator/Date | Subcontractor Representative/Date

Pro Environmental

MK-ENVIRONMENTAL SERVICES
A DIVISION OF MORRISON KNUDSEN

CHAIN OF CUSTODY RECORD

720 Park Blvd., P.O. Box 79
Boise, Idaho 83707
(208) 386-6871

Project No.:

Project Name: UST FY94

Samplers: (Signature) Cheri Hoods - Phone 208-234-4700

Sampler: (Print) CHERI HOODS - FAX # 208-234-1471

Sample Type	Sampling Point Description	Sample Date	Time	Sample I.D. Number	Split Samples Yes	Split Samples No	Analysis Requested: TPH-BOLS	Remarks
Soil	SOUTH END	8-24-94	13:50	PBF2594TPHS	✓		✓	24 hr Turnaround
Soil	MIDDLE	8-24-94	14:00	PBF2594TPHM	✓		✓	
Soil	NORTH END	8-24-94	14:10	PBF2594TPHD	✓		✓	

Please fax results to Dale Reynolds at 208-526-0611

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Relinquished By: (Signature)	Date/Time	Received By: (Signature)
Company: Cheri Hoods - Pro Environ.	8-25	Company:	Company:		Company:
Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Relinquished By: (Signature)	Date/Time	Received By: (Signature)
Company:		Company:	Company:		Company:
Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Received for Laboratory By: (Signature)	Date/Time	Total No. Samples this Shipping Container:
Company:		Company:	Company: Barnsdall Utility Testing	8-29 17:15	
Relinquished By: (Signature)	Date/Time	Received By: (Signature)		Date/Time	
Company:		Company:			

J-459

UTILITY TESTING LABORATORY

875 SO. CHESTNUT ST.
P. O. BOX 25005
SALT LAKE CITY, UTAH 84125
PHONE: (801) 973-8305
FAX: (801) 973-8333

August 30, 1994

Pro Enviromental Services, Inc.
150 South Arthur, Suite 219
Pocatello, ID 83204

Attention: Ms. Cheri Honas

Subject: TPH Testing - Proj. - UST FY94

Sample Collected: 24 Aug 1994

Sample Received: 29 Aug 1994

TOTAL PETROLEUM HYDROCARBONS (TPH) - GASOLINE & DIESEL
(MODIFIED CALIFORNIA METHOD 8015)
METHOD DETECTION LIMITS: 10 ppm SOIL, .5 ppm WATER

Test No.	SOIL SAMPLE	Test Results mg/Kg, mg/L (ppm)
08-29-94-10	SOUTH END	< 1,000 mg/Kg Gasoline
	PBF75294TPHS	22,500 mg/Kg Diesel
Date Analyzed:		22,500 mg/Kg TPH
30 AUG 1994		

Test No.	SOIL SAMPLE	Test Results mg/Kg, mg/L (ppm)
08-29-94-11	MIDDLE	< 100 mg/Kg Gasoline
	PBF75294TPHM	2,670 mg/Kg Diesel
Date Analyzed:		2,670 mg/Kg TPH
29 AUG 1994		

Test No.	SOIL SAMPLE	Test Results mg/Kg, mg/L (ppm)
08-29-94-12	NORTH END	< 1,000 mg/Kg Gasoline
	PBF75294TPHN	17,600 mg/Kg Diesel
Date Analyzed:		17,600 mg/Kg TPH
30 AUG 1994		

UTILITY TESTING LABORATORY

D. M. Thorsen

D. M. Thorsen

#1 & #2

8-11-94 1:30pm
FIELD SCREEN SAMPLE
#2 - READING 150 ppm

TANK #152
SPERT II - PER 612

8-11-94 1:30pm
FIELD SCREEN SAMPLE
#1 - READING 120 ppm

From: HXX --INELVM1 Date and time 08/22/94 12:33:53
To: GWK2 --INELVM1 G W Keith
cc: SC8 --INELVM1 S J Corrigan FES --INELVM1 F E Stoll

FROM: CHUCK HICKS
WROC/PBF LANDLORD
6-2003 MS:8101
Subject: PBF AREA UST ISSUES FOR N. LEWIS
In regards to the UST contaminated soil issue at PER-612, I concur with the decision to leave the soil as is. I would like a copy of the CID documenting this decision. As to the underground romex cable at PER-613 with the questionable splice - our engineering staff has looked at it and are waiting for the opinion of Gale Manwell from Radio & Alarm. The cable goes to a fire system Post Indicator Valve and provides an alarm indicator to the CFA Fire Station. As soon as we get a reply from Radio & Alarm I will let you know.

This is Re.L.

RECEIVED
8/22/94

Confirmation samples exceed 2000ppm.
DEQ and EG&G contacted for direction
As of 30 Aug 94.

ATTACHMENT 13

Department of Energy
Idaho Operations Office
850 Energy Drive
Idaho Falls, Idaho 83401-1563

September 22, 1994

Ms. Catherine Reno
Idaho Department of Health & Welfare
Division of Environmental Quality
900 North Skyline
Idaho Falls, Idaho 83402

SUBJECT: Release of Petroleum Products from PBF 752 and PBF 742 - (OPE-SP-94-322)

Dear Ms. Reno:

Pursuant to our conversations of September 8 and 15, 1994, this letter transmits sampling data from soil surrounding two underground heating oil storage tanks designated as Power Burst Facility (PBF) 742 and PBF 752. It is the intent of the Department of Energy (DOE) with concurrence from the Idaho Department of Health and Welfare, Division of Environmental Quality (IDHW-DEQ), and the Environmental Protection Agency (EPA), to place these releases under the auspices of the Federal Facility Agreement/Consent Order (FFA/CO). This agreement implements the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process at the Idaho National Engineering Laboratory (INEL). Further site characterization and remediation (if required) will fully comply with the FFA/CO and CERCLA requirements.

Initial discovery of the releases occurred during the removal of these tanks. In compliance with Idaho Administrative Procedures Act (IDAPA) 16.01.02.850.03, personnel from MK-Ferguson notified the IDHW-DEQ of the releases. Subsequent sampling of the contaminated media has revealed total petroleum hydrocarbon levels in excess of 22,000 and 5,000 ppm respectively. All contaminated dirt and gravel has been removed from the excavation site and will be landfarmed at the INEL landfill in accordance with company procedure and State requirements.

The DOE will continue to notify your office immediately upon discovery of release of petroleum products or hazardous materials that have the potential to contaminate waters of the State of Idaho and to comply fully with IDAPA 16.01.02.850-852.

UTILITY TESTING LABORATORY

875 SO. CHESTNUT ST.
P. O. BOX 25005
SALT LAKE CITY, UTAH 84125
PHONE: (801) 973-8305
FAX: (801) 973-8333

August 30, 1994

PBF 752

Pro Environmental Services, Inc.
150 South Arthur, Suite 219
Pocatello, ID 83204

Attention: Ms. Cheri Honas

Subject: TPH Testing - Proj. - UST FY94

Sample Collected: 24 Aug 1994

Sample Received: 29 Aug 1994

TOTAL PETROLEUM HYDROCARBONS (TPH) - GASOLINE & DIESEL
(MODIFIED CALIFORNIA METHOD 8015)
METHOD DETECTION LIMITS: 10 ppm SOIL, .5 ppm WATER

Test No.	SOIL SAMPLE	Test Results mg/Kg, mg/L (ppm)
08-29-94-10	SOUTH END	< 1,000 mg/Kg Gasoline
	PBF75294TPHS	22,500 mg/Kg Diesel
Date Analyzed:		22,500 mg/Kg TPH
30 AUG 1994		

Test No.	SOIL SAMPLE	Test Results mg/Kg, mg/L (ppm)
08-29-94-11	MIDDLE	< 100 mg/Kg Gasoline
	PBF75294TPHM	2,670 mg/Kg Diesel
Date Analyzed:		2,670 mg/Kg TPH
29 AUG 1994		

Test No.	SOIL SAMPLE	Test Results mg/Kg, mg/L (ppm)
08-29-94-12	NORTH END	< 1,000 mg/Kg Gasoline
	PBF75294TPHN	17,600 mg/Kg Diesel
Date Analyzed:		17,600 mg/Kg TPH
30 AUG 1994		

UTILITY TESTING LABORATORY

D. M. Thorsen

D. M. Thorsen

Pro environmental

MK-ENVIRONMENTAL SERVICES
A DIVISION OF MK-FERGUSON

728 Park Blvd., P.O. Box 79
Boise, Idaho 83707
(208) 386-6971

CHAIN OF CUSTODY RECORD

Project No.:

Project Name: UST FY94

Samplers: (Signature) Cheri Honas - Phone 208-234-4700

Sampler: (Print) CHERI HONAS - FAX # 208-234-1471

Sample Type	Sampling Point Description	Sample Date	Time	Sample I.D. Number	Split Samples Yes	Split Samples No	Analysis Required: TPH-8015	Remarks
Soil	SOUTH END	8-24-94	13:50	PBF252941TPHS		✓	✓	24 hr Turn around ↓
Soil	MIDDLE	8-24-94	14:00	PBF252941TPHM		✓	✓	
Soil	NORTH END	8-24-94	14:10	PBF252941TPHN			✓	

Please fax results to Dale Reynolds at 208-526-0611

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Relinquished By: (Signature)	Date/Time	Received By: (Signature)
Cheri Honas Company: Pro Environ. Services	8-25	Company:	Company:		Company:
Relinquished By: (Signature) Company:	Date/Time	Received By: (Signature) Company:	Relinquished By: (Signature) Company:	Date/Time	Received By: (Signature) Company:
Relinquished By: (Signature) Company:	Date/Time	Received By: (Signature) Company:	Received for Laboratory By: (Signature) Harmsworth Company: Utility Testing	Date/Time	Total No. Samples this Shipping Container:
Relinquished By: (Signature) Company:	Date/Time	Received By: (Signature) Company:		Date/Time 8-29 12:15	

J-467

ATTACHMENT 14

Fax 6-6852

Your Ground Water and Environmental Industry Education Leader

To: Vaughn Hatferd

From: Alan Jines

The attached message you couldn't get.

Again

1 page plus cover

ISSUE

MK-FIC (Project Manager for the INEL UST Program) has encountered Total Petroleum Hydrocarbon (TPH) exposure limits on the PBF-743 Underground Storage Tank, that exceed the allowable TPH limit. MK-FIC has subsequently stopped all construction activities on this UST project, pending resolution of this issue.

Tank #	Bldg	Location	Exist. Capac.	New Capac.	Fuel	Recorded TPH Limits (PPM)	Allowable TPH limits (PPM)
PBF-Spert II-752	PBF-312	WERDF	2,000 (gal)	2,500 (gal)	Fuel Oil	22,000	2,000

FACTS/ INFORMATION

- On 8/12, MK-FIC received initial soil sample results from outside lab. Results exceeded the allowable limits.
- On 8/22, DEQ directed MK-FIC to submit new soil samples for confirmation.
- On 8/29, MK-FIC received soil sample confirmation results, which confirmed earlier sample results.
- On 8/30, MK-FIC notified DEQ of the confirmed exceeded TPH exposure limit.

REQUEST FOR SUPPORT/GUIDANCE

Please advise, as this UST project is a fuel oil tank that EG&G uses to provide building heating for winter.

ATTACHMENT 15

INEL
Idaho National Engineering Laboratory

MK-FIC-E-217

September 9, 1994

Ms. Katherine Reno
State of Idaho
Department of Environmental Quality
900 North Skyline
Idaho Fall, ID 83402

via fax
(208) 528-2695

Subject: Corrective Action at PBF 752 Request for Approval

Dear Ms. Reno: And PBF742

As you are aware, we have encountered pre-existing petroleum contamination at a UST Site by the designation of PBF 752 with TPH levels in excess of 22000 ppm.

In efforts to supply the much needed fuel to Building PBF/PER-612 by September 30, 1994, we request your approval of our proceeding with the UST replacement immediately.

We propose the installation of a sand bedding, liner and the installation of monitoring tubes.

We recognize that this tank may be removed if futufe remedial requirements are issued. If removal is required, as stated above, the Idaho Department of Environmental Quality (DEQ) shall not be held liable for any costs or actions associated with same.

Your prompt written approval (via facsimile to 526-0611) and cooperation in allowing us to provide the necessary fuel services to our site facilities is requested and appreciated.

Sincerely,

F. E. Hicks
Project Manager
Miscellaneous Projects

S. D. Palomo
Project Manager
DOE-ID

FEH/NEL/bm

cc: J. A. Malmo, DOE-ID/MS 1150
T. L. Trace, EG&G/MS 4125
A. D. Rodger, EG&G/MS 8101

INEL
Idaho National Engineering Laboratory

Pages 2 (including cover sheet)

TO: Von Halford

EG&G 526-6096

FAX - 526-9473

FROM: Dale Reynolds / Natalie Lewis

MK-FIC

526-8250

DATE: 9/12/94

TIME:

If you do not receive all pages, please call (208) 526-0612 as soon as possible.

MK-Ferguson of Idaho Company's Fax No. is (208) 526-0611. Located at INEL/CFA 688

Please review the attached letter and call us with your comments.

Thanks Dale

MK-FERGUSON OF IDAHO COMPANY
A MORRISON KNUDSEN COMPANY
P.O. BOX 1748, IDAHO FALLS, ID 83403-1748 (208) 526-3471

ATTACHMENT 16

Summary of the ARA/PBF Groundwater Monitoring Data Collected April, 1995

The following is a brief summary of the ARA/PBF Groundwater Monitoring Data collected in April, 1995. The groundwater samples were collected by the Lockheed Martin Idaho Technologies, Inc. Environmental Monitoring Department in support of the INEL Groundwater Monitoring Program. The data are being presented and reviewed within Waste Area Group 5 to support the conclusions of the Operable Units 5-08 and 5-09 Track 2 Summary Reports that no adverse impact to the groundwater are anticipated from these sites. The data have not been validated following the Federal Facility Agreement/Consent Order because the data were collected outside of that agreement and were not planned for following the INEL Sample Management Office procedures.

General Water Quality Parameters - In general, all the parameters tested at the ARA/PBF wells were within the established ranges for the INEL and are considered to be acceptable. The results of the alkalinity, bicarbonate, specific conductance, total dissolved solids and pH all indicate that the groundwater is slightly hard (having dissolved minerals present, such as calcium and magnesium).

Radionuclides - No gamma-emitting radionuclides, Strontium-90 or tritium were detected at any of the ARA/PBF wells. Gross Alpha was detected at one well at PBF at 3.3 pCi/L, which is well below the Maximum Contaminant Level (MCL) of 15 pCi/L. Gross Beta was detected at low concentrations in every well at ARA/PBF at ranges of 2.74 to 3.87 pCi/L.

Volatile Organics - Several volatile organics were detected during the sampling at ARA and PBF, with different types detected at each location. This difference is likely related to the fact that the ARA wells were sampled and analyzed on separate days compared to the PBF wells.

Volatile organic contaminants detected in the ARA wells was only Acetone. Acetone was also detected in the Quality Control samples. Chloroform, Methylene Chloride, Bromodichloromethane and Carbon disulfide were also detected in the Quality Control samples but not in any groundwater sample. It should be noted that one Quality Control sample planned for in the Sampling and Analysis Plan was not analyzed. Apparently the laboratory received the sample and logged it in, but did not analyze it.

Volatile organic contaminants detected in the PBF wells were Methylene Chloride and toluene. Methylene Chloride was detected at concentrations above the MCL and toluene was well below the MCL. Methylene Chloride was also detected in the associated method blank(s) and Quality Control samples. Chloroform and Bromodichloromethane were also detected in the associated Quality Control samples.

Metals - Only Lead was detected above the MCLs in the groundwater from one ARA well. Beryllium was detected in the unfiltered groundwater samples in one PBF well above the 10-6 risk-based water concentrations (Cheat Sheets, EPA, 1992). Arsenic and Beryllium were both detected in the filtered ground water samples at PBF above the 10-6 risk-based water concentrations (Cheat Sheets, EPA, 1992).

Analyses	ARA-MON-A-001 00295011	ARA-MON-A-001 00295012	ARA-MON-A-002 00295021	ARA-MON-A-003A 00295031	ARA-MON-A-004 00295041	ARA-QC Field Blank 00295051	ARA-QC Trip Blank 00295061	ARA-QC Trip Blank 00295062	Maximum Contaminant Levels	10^{-6} Risk-based Water Concentration (EPA)
Gross Alpha (pCi/L)	<3.0	<3.2	<2.9	<2.7	<6.3	N/A	N/A	N/A	15	N/A
Gross Beta (pCi/L)	3.62 ± 0.84	3.87 ± 0.88	3.62 ± 0.91	2.82 ± 0.81	2.94 ± 0.96	N/A	N/A	N/A	N/A	N/A
Sr-90 (pCi/L)	<0.58	<0.67	<0.59	<0.60	<0.61	N/A	N/A	N/A	8	N/A
Tritium (pCi/L)	<690.0	<690.0	<690.0	<700.0	<700.0	N/A	N/A	N/A	20,000	N/A
Gamma Spec (pCi/L)	ND	ND	ND	ND	ND	N/A	N/A	N/A	N/A	N/A
Volatile Organics (µg/L)										
Acetone	2 J	1 J	ND	ND	2 J	VOID	1 J	3 J	N/A	N/A
Chloroform	ND	ND	ND	ND	ND	VOID	30	30	N/A	0.4
Methylene Chloride	ND	ND	ND	ND	ND	VOID	1 J	ND	5.0	3.0
Bromodichloromethane	ND	ND	ND	ND	ND	VOID	4 J	4 J	N/A	0.6
Carbon Disulfide	ND	ND	ND	ND	ND	VOID	ND	1 J	N/A	N/A
Total Metals (unfiltered) (µg/L)										
Arsenic	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	N/A	N/A	50.0	0.05
Beryllium	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	N/A	N/A	4.0	0.02
Calcium	29700.0	37300.0	36400.0	37600.0	39300.0	33.5	N/A	N/A	N/A	N/A
Chromic	6.4	5.5	5.3	4.3	5.5	4.2 U	N/A	N/A	50.0	N/A
Iron	40.7	25.7	117.0	34.6	287.0	14.3	N/A	N/A	N/A	N/A
Lead	15.4	11.8	14.4	11.6	14.0	1.5 U	N/A	N/A	50.0	N/A
Magnesnim	12400.0	15600.0	15000.0	15700.0	16300.0	48.10	N/A	N/A	N/A	N/A
Potassium	3010.0	3620.0	3450.0	3120.0	3720.0	1060.0	N/A	N/A	N/A	N/A
Sodium	1600.0	17700.0	17500.0	18500.0	18900.0	96.4	N/A	N/A	N/A	N/A
Total Metals (filtered) (µg/L)										
Arsenic	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	N/A	N/A	N/A	50.0	0.05
Beryllium	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	N/A	N/A	N/A	4.0	0.02
Calcium	35900.0	36200.0	34300.0	38500.0	41400.0	N/A	N/A	N/A	N/A	N/A

Analyses	PBF-MON-A-001 00295071	PBF-MON-A-001 00295072	PBF-MON-A-003 00295081	PBF QC Field Blank 00295091	PBF QC Trip Blank 00295101	Maximum Contaminant Levels	10^{-6} Risk-based Water Concentration (EPA)
Gross Alpha (pCi/L)	3.3± 1.1	<2.5	<2.7	N/A	N/A	15	N/A
Gross Beta (pCi/L)	3.24 ± 0.73	3.20 ± 0.87	2.72 ± 0.69	N/A	N/A	N/A	N/A
Sr-90 (pCi/L)	<0.70	<0.71	<0.63	N/A	N/A	8	N/A
Tritium (pCi/L)	<690.0	<690.0	<690.0	N/A	N/A	20,000	N/A
Gamma Spec (pCi/L)	ND	ND	ND	N/A	N/A	N/A	N/A
Volatile Organics (µg/L)							
Methylene Chloride	3 JB	10 B	9 B	11 B	8 B	5.0	3.0
Toluene	ND	1 J	ND	ND	ND	1000.0	N/A
Chloroform	ND	ND	ND	33	ND	100	0.4
Bromodichloromethane	ND	ND	ND	4	ND	700	0.6
Total Metals (unfiltered) (µg/L)							
Arsenic	1.8 U	1.8 U	1.8 U	1.8 U	N/A	50.0	0.05
Beryllium	0.7 U	0.7 U	0.7 U	1.3	N/A	4.0	0.02
Calcium	28700.0	36400.0	35600.0	99.4	N/A	N/A	N/A
Chromium	4.2 U	6.3	10.0	4.2 U	N/A	50.0	N/A
Iron	167.0	252.0	35.2	12.4 U	N/A	N/A	N/A
Lead	10.2	20.8	4.2	1.5 U	N/A	50.0	N/A
Magnesium	11600.0	14900.0	13300.0	48.1 U	N/A	N/A	N/A
Potassium	2680.0	3530.0	2960.0	1060.0 U	N/A	N/A	N/A
Sodium	7900.0	9980.0	11600.0	284.0	N/A	N/A	N/A
Total Metals (filtered) (µg/L)							
Arsenic	2.50	1.8 U	1.8 U	N/A	N/A	50.0	0.05
Beryllium	1.30	1.3	1.3	N/A	N/A	4.0	0.02
Calcium	26100.0	36100.0	35700.0	N/A	N/A	N/A	N/A

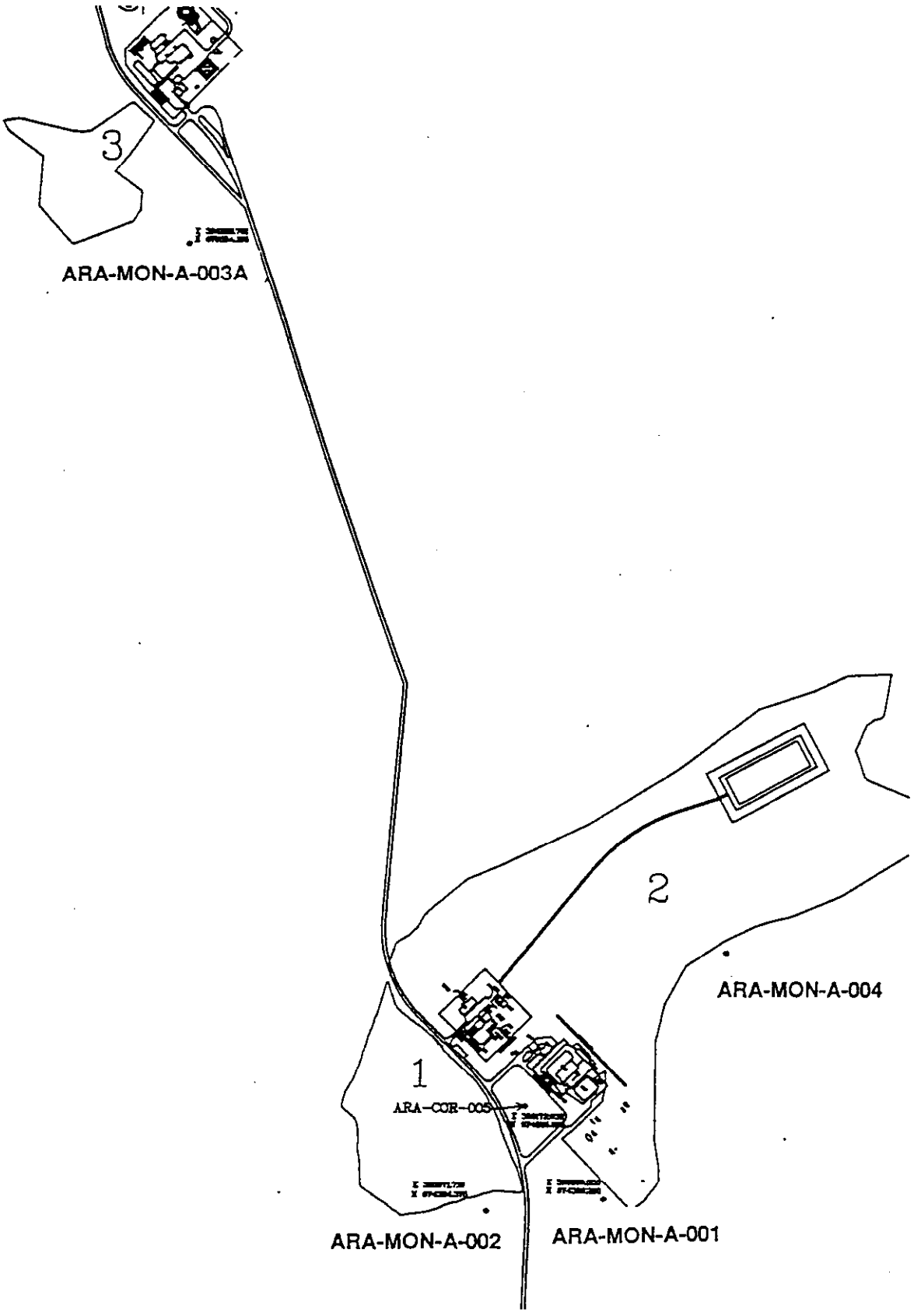


Figure 1.1: ARA wells

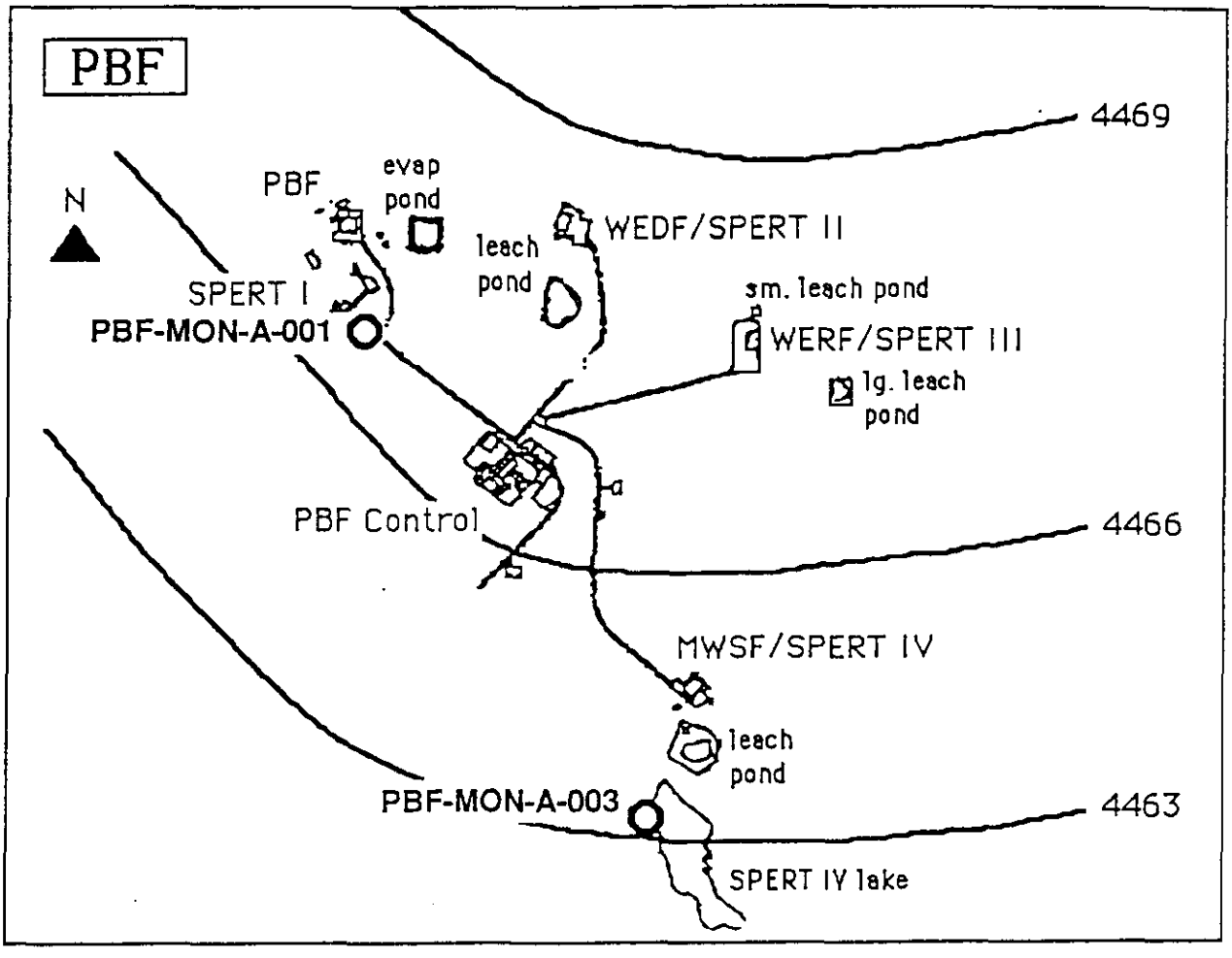


Figure 1.2: PBF wells

GLOSSARY OF VOA DATA

DATA QUALIFIERS

U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

D = Identifies all compounds identified in an analysis at a secondary dilution factor.

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.

X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).

Y = Additional qualifiers used as required are explained in the case narrative.

1A

VOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

00295072VG

Lab Name: Roy F. Weston, Inc. Work Order: 10875002001

Client: LITCO-259

Matrix: WATER

Lab Sample ID: 9504L572-026

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: X4J17

Level: (low/med) LOW

Date Received: 04/14/95

% Moisture: not dec. _____

Date Analyzed: 04/19/95

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L

74-87-3---------Chloromethane	10	U
74-83-9---------Bromomethane	10	U
75-01-4---------Vinyl Chloride	10	U
75-00-3---------Chloroethane	10	U
75-09-2---------Methylene Chloride	10	B
67-64-1---------Acetone	10	U
75-15-0---------Carbon Disulfide	5	U
75-35-4---------1,1-Dichloroethene	5	U
75-34-3---------1,1-Dichloroethane	5	U
540-59-0--------1,2-Dichloroethene (total)	5	U
67-66-3---------Chloroform	5	U
107-06-2--------1,2-Dichloroethane	5	U
78-93-3---------2-Butanone	10	U
71-55-6---------1,1,1-Trichloroethane	5	U
56-23-5---------Carbon Tetrachloride	5	U
108-05-4--------Vinyl Acetate	10	U
75-27-4---------Bromodichloromethane	5	U
78-87-5---------1,2-Dichloropropane	5	U
10061-01-5------cis-1,3-Dichloropropene	5	U
79-01-6---------Trichloroethene	5	U
124-48-1--------Dibromochloromethane	5	U
79-00-5---------1,1,2-Trichloroethane	5	U
71-43-2---------Benzene	5	U
10061-02-6------Trans-1,3-Dichloropropene	5	U
75-25-2---------Bromoform	5	U
108-10-1--------4-Methyl-2-pentanone	10	U
591-78-6--------2-Hexanone	10	U
127-18-4--------Tetrachloroethene	5	U
79-34-5---------1,1,2,2-Tetrachloroethane	5	U
108-88-3--------Toluene	1	J
108-90-7--------Chlorobenzene	5	U
100-41-4--------Ethylbenzene	5	U
100-42-5--------Styrene	5	U
1330-20-7-------Xylene (total)	5	U

FORM 1 V-1 12/88 Rev.

ATTACHMENT 17

United States
Environmental Protection
Agency

Office of Emergency and
Remedial Response
Washington, DC 20460

EPA/540/1-89/002
December 1989

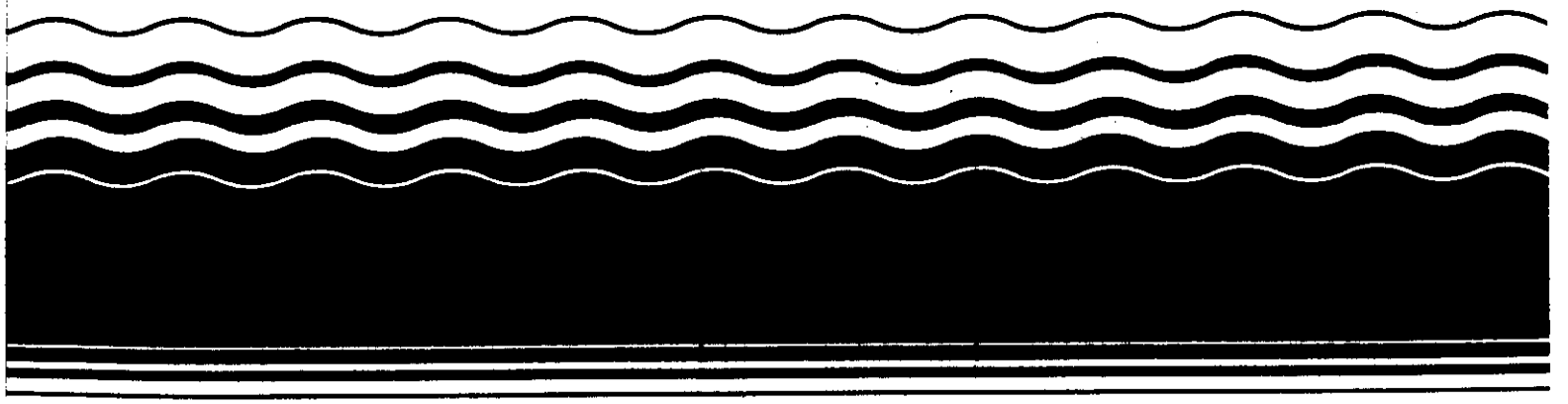
Cahn

Superfund

EPA

Risk Assessment Guidance for Superfund Volume I Human Health Evaluation Manual (Part A)

Interim Final



not by the validator), then use the R-qualified data in a manner similar to the use of J-qualified data (i.e., use the R-qualified concentrations the same way as positive data that do not have this qualifier). If possible, note whether the R-qualified data are overestimates or underestimates of actual expected chemical concentrations so that appropriate caveats may be attached if data qualified with an R contribute significantly to the risk.

5.4.2 USING THE APPROPRIATE QUALIFIERS

The information presented in Exhibits 5-4 and 5-5 is based on the most recent EPA guidance documents concerning qualifiers: the SOW for Inorganics and the SOW for Organics (EPA 1988b,c) for laboratory qualifiers, and the Functional Guidelines for Inorganics and the Functional Guidelines for Organics (EPA 1988d,e) for validation qualifiers. The types and definitions of qualifiers, however, may be periodically updated within the CLP program. In addition, certain EPA regions may have their own data qualifiers and associated definitions. These regional qualifiers are generally consistent with the Functional Guidelines, but are designed to convey additional information to data users.

In general, the risk assessor should check whether the information presented in this section is current by contacting the appropriate regional CLP or headquarters Analytical Operations Branch staff. Also, if definitions are not reported with the data, regional contacts should be consulted prior to evaluating qualified data. These variations may affect how data with certain qualifiers should be used in a risk assessment. Make sure that definitions of data qualifiers used in the data set for the site have been reported with the data and are current. Never guess about the definition of qualifiers.

5.5 COMPARISON OF CONCENTRATIONS DETECTED IN BLANKS WITH CONCENTRATIONS DETECTED IN SAMPLES

Blank samples provide a measure of contamination that has been introduced into a sample set either (1) in the field while the samples were being collected or transported to the laboratory or (2) in the laboratory during sample preparation or analysis. To prevent the inclusion of non-site-related contaminants in the risk assessment, the concentrations of chemicals detected in blanks must be compared with concentrations of the same chemicals detected in site samples. Detailed definitions of different types of blanks are provided in the box on the next page.

Blank data should be compared with results from samples with which the blanks are associated. It is often impossible, however, to determine the association between certain blanks and data. In this case, compare the blank data with results from the entire sample data set. Use the guidelines in the following paragraphs when comparing sample concentrations with blank concentrations.

Blanks containing common laboratory contaminants. As discussed in the CLP SOW for Organics (EPA 1988c) and the Functional Guidelines for Organics (EPA 1988e), acetone, 2-butanone (or methyl ethyl ketone), methylene chloride, toluene, and the phthalate esters are considered by EPA to be common laboratory contaminants. In accordance with the Functional Guidelines for Organics (EPA 1988e) and the Functional Guidelines for Inorganics (EPA 1988d), if the blank contains detectable levels of common laboratory contaminants, then the sample results should be considered as positive results only if the concentrations in the sample exceed ten times the maximum amount detected in any blank. If the concentration of a common laboratory contaminant is less than ten times the blank concentration, then conclude that the chemical was not detected in the particular sample and, in accordance with EPA guidance, consider the blank-related concentrations of the chemical to be

REFERENCES FOR CHAPTER 5

Environmental Protection Agency (EPA). 1984. Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater (EPA 600 Methods) as presented in 40 CFR Part 136, Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act.

- Used to determine chemicals present in municipal and industrial wastewater as provided under the Clean Water Act. Analytical methods for priority pollutants, including sample preparation, reagents, calibration procedures, QA/QC analytical procedures, and calculations.

Environmental Protection Agency (EPA). 1986. Test Methods for Evaluating Solid Waste (SW-846): Physical/Chemical Methods. Office of Solid Waste.

- Provides analytical procedures to test solid waste to determine if it is a hazardous waste as defined under RCRA. Contains information for collecting solid waste samples and for determining reactivity, corrosivity, ignitability, composition of waste, and mobility of waste components.

Environmental Protection Agency (EPA). 1987. Drinking Water; Proposed Substitution of Contaminants and Proposed List of Additional Substances Which May Require Regulation Under the Safe Drinking Water Act. 52 Federal Register 25720 (July 8, 1987).

Environmental Protection Agency (EPA). 1988a. User's Guide to the Contract Laboratory Program. Office of Emergency and Remedial Response.

- Provides requirements and analytical procedures of the CLP protocols developed from technical caucus recommendations for both organic and inorganic analysis. Contains information on CLP objectives and orientation, CLP structure, description of analytical services, utilization of analytical services, auxiliary support services, and program quality assurance.

Environmental Protection Agency (EPA). 1988b. Contract Laboratory Program Statement of Work for Inorganics Analysis: Multi-media, Multi-concentration. Office of Emergency and Remedial Response. SOW No. 788.

- Provides procedures required by EPA for analyzing hazardous waste disposal site samples (aqueous and solid) for inorganic chemicals (25 elements plus cyanide). Contains analytical, document control, and quality assurance/quality control procedures.

Environmental Protection Agency (EPA). 1988c. Contract Laboratory Program Statement of Work for Organics Analysis: Multi-media, Multi-concentration. Office of Emergency and Remedial Response. SOW No. 288.

- Provides procedures required by EPA for analyzing aqueous and solid hazardous waste samples for 126 volatile, semi-volatile, pesticide, and PCB chemicals. Contains analytical, document control, and quality assurance/quality control procedures.

Environmental Protection Agency (EPA). 1988d. Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analysis. Office of Emergency and Remedial Response.

- Provides guidance in laboratory data evaluation and validation for hazardous waste site samples analyzed under the EPA CLP program. Aids in determining data problems and shortcomings and potential actions to be taken.

Environmental Protection Agency (EPA). 1988e. Laboratory Data Validation Functional Guidelines for Evaluating Organics Analysis (Functional Guidelines for Organics). Office of Emergency and Remedial Response.

- Provides guidance in laboratory data evaluation and validation for hazardous waste site samples analyzed under the EPA CLP program. Aids in determining data problems and shortcomings and potential actions to be taken.

Environmental Protection Agency (EPA). 1988f. Special Report on Ingested Inorganic Arsenic; Skin Cancer; Nutritional Essentiality. Risk Assessment Forum. EPA 625/3-87/013.

- Technical report concerning the health effects of exposure to ingested arsenic. Includes epidemiologic studies suitable for dose-response evaluation from Taiwan, Mexico, and Germany. Also includes discussions on pathological characteristics and significance of arsenic-induced skin lesions, genotoxicity of arsenic, metabolism and distribution, dose-response estimates for arsenic ingestion and arsenic as an essential nutrient.